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# **Notice of Allowability**

Application No.

09/631,036

Examiner

David L Jones

Applicant(s)

PEW ET AL.

Art Unit

2622

## **-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 4/16/04.
2. ☒ The allowed claim(s) is/are 1-5,8 and 21-23.
3. ☒ The drawings filed on 7/31/2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## **Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
**EDWARD COLES**  
SUPERVISORY PATENT EXAMINER  
BIOLOGY CENTER 2600

**DETAILED ACTION**

***EXAMINER'S AMENDMENT***

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steve Ormiston on 20 October 2004.

The application has been amended as follows:

**Regarding claim 1**, a printer, comprising:

a first virtual memory address bus;

a plurality of bus masters comprising a central processing unit, an input/output port and a print engine interface coupled to the ~~first~~ virtual memory address bus;

a ~~second~~ physical memory address bus;

a printer memory coupled to the ~~second~~ physical memory address bus; and

an address translation unit coupled to the ~~first~~ virtual memory and ~~second~~ physical memory address buses, the address translation unit operable to translate virtual addresses received from the bus masters over the virtual memory bus into physical memory addresses.

**Regarding claim 2**, the printer of claim 1, wherein the address translation unit is further operable to transmit physical memory addresses over the ~~second~~ physical memory address bus.

**Regarding claim 4**, the printer of claim 3, wherein one of the bus masters comprises the central processing unit coupled to the ~~first~~ virtual memory address bus.

**Regarding claim 5**, the printer of claim 4, wherein another of the bus masters comprises a direct memory access controller associated with the input/output port coupled to the ~~first~~ virtual memory address bus.

**Regarding claim 8**, the printer of claim 1, wherein the address translation unit is operable to translate virtual addresses received over the ~~first~~ virtual memory address bus into physical addresses for addressing the printer memory and to then transmit these physical addresses to the memory over the ~~second~~ physical memory address bus.

**Regarding claim 21**, a printer, comprising:

a ~~first~~ virtual memory address bus;

a ~~second~~ physical memory address bus;

a central processing unit coupled to the ~~first~~ virtual memory address bus;

an input/output port having a first direct memory access controller coupled to the ~~first~~ virtual memory address bus, the first direct memory access controller operable to manipulate data using virtual memory addresses;

a print engine interface having a second direct memory access controller coupled to the ~~first~~ virtual memory address bus, the second direct memory access controller operable to manipulate data using virtual memory addresses;

a print engine coupled to the print engine interface;

a printer memory coupled to the ~~second~~ physical memory address bus, the memory operable to store data using physical memory addresses; and

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an address translation unit coupled between the ~~first~~ virtual memory address bus and to the ~~second~~ physical memory address bus, the address translation unit operable to translate between virtual memory addresses and physical memory addresses.

*Allowable Subject Matter*

2. Claims 1-5, 8, and 21-23 are allowed.

3. The following is an examiner's statement of reasons for allowance:

A printer comprising:

a virtual memory address bus;

a plurality of bus masters comprising a central processing unit, an input/output port and a print engine interface coupled to the virtual memory address bus;

a physical memory address bus;

a printer memory coupled to the physical memory address bus; and

an address translation unit coupled to the virtual memory and physical memory address buses, the address translation unit operable to translate virtual addresses received from the bus masters over the virtual memory bus into physical memory addresses.

The features identified, in combination with other claim limitations, are neither suggested nor discussed by the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L Jones whose telephone number is (703) 305-4675. The examiner can normally be reached on Monday - Friday (6:30am-4:00pm) off on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Coles can be reached on (703) 305-4712. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David L. Jones



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